

(No Model.)

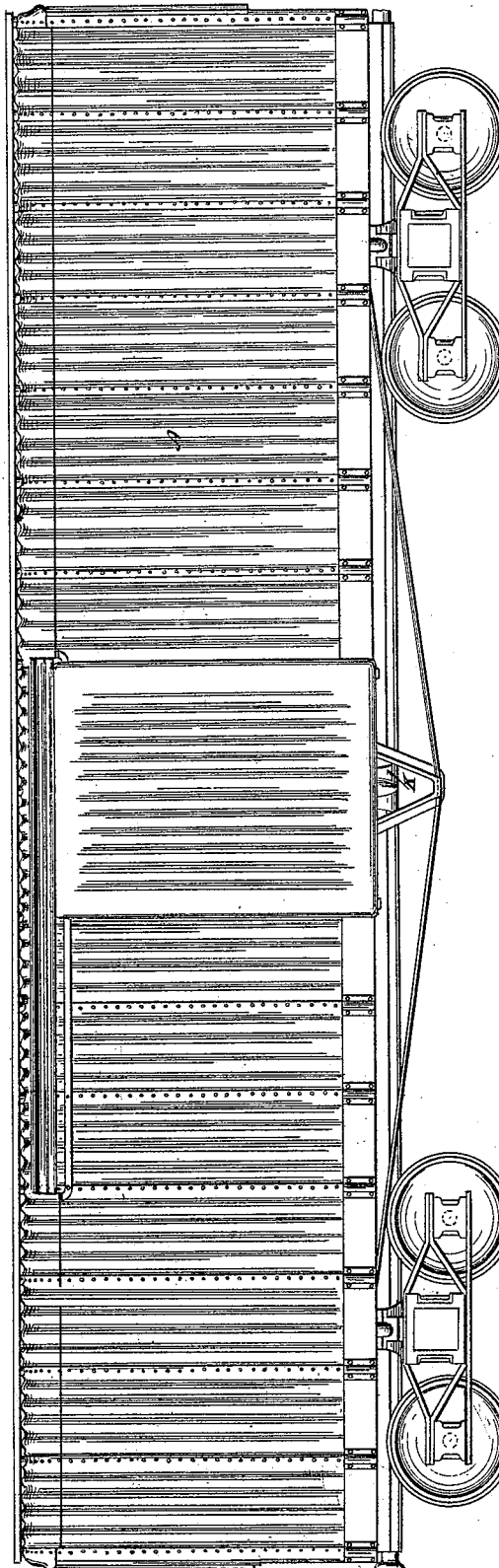
4 Sheets—Sheet 1.

D. L. BARNES.  
METALLIC CAR.

No. 421,653.

Patented Feb. 18, 1890.

*Fig. 1.*



Witnesses:  
*H. Cantant*  
*D. W. Archer*

Inventor:  
*David L. Barnes*  
By his Attorney,  
*E. W. Dickerson*

(No Model.)

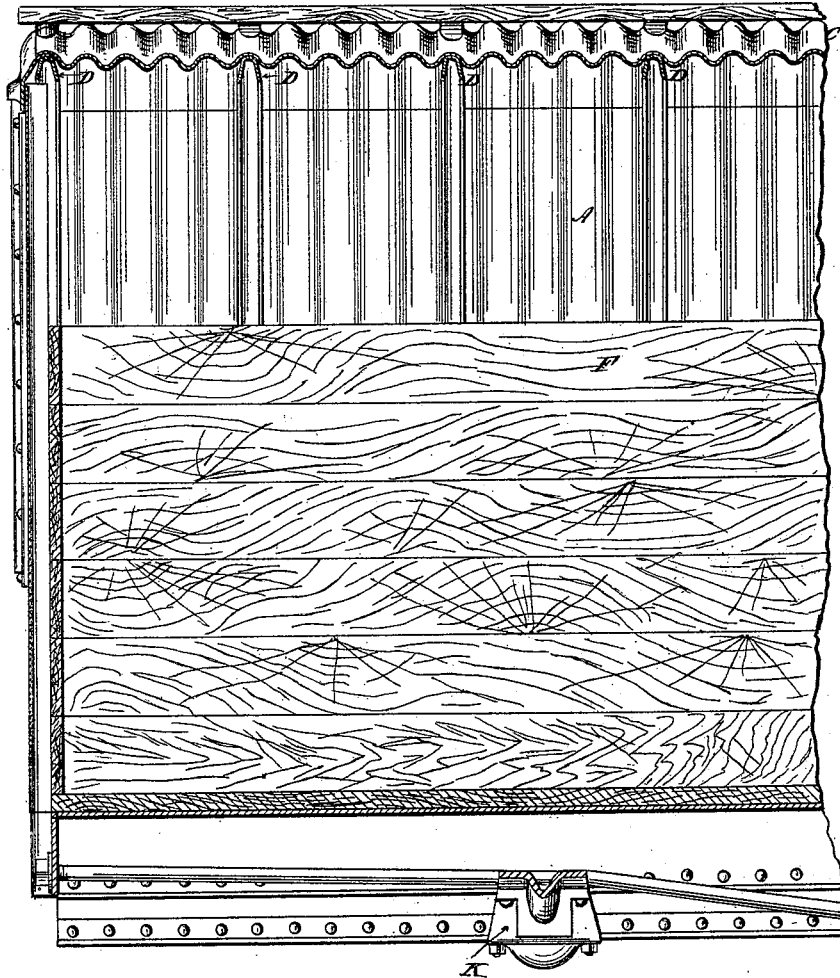
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*Fig. 2.*



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Inventor:

*David L. Barnes*

*By his Attorney,*

*E. N. Dickerson*

(No Model.)

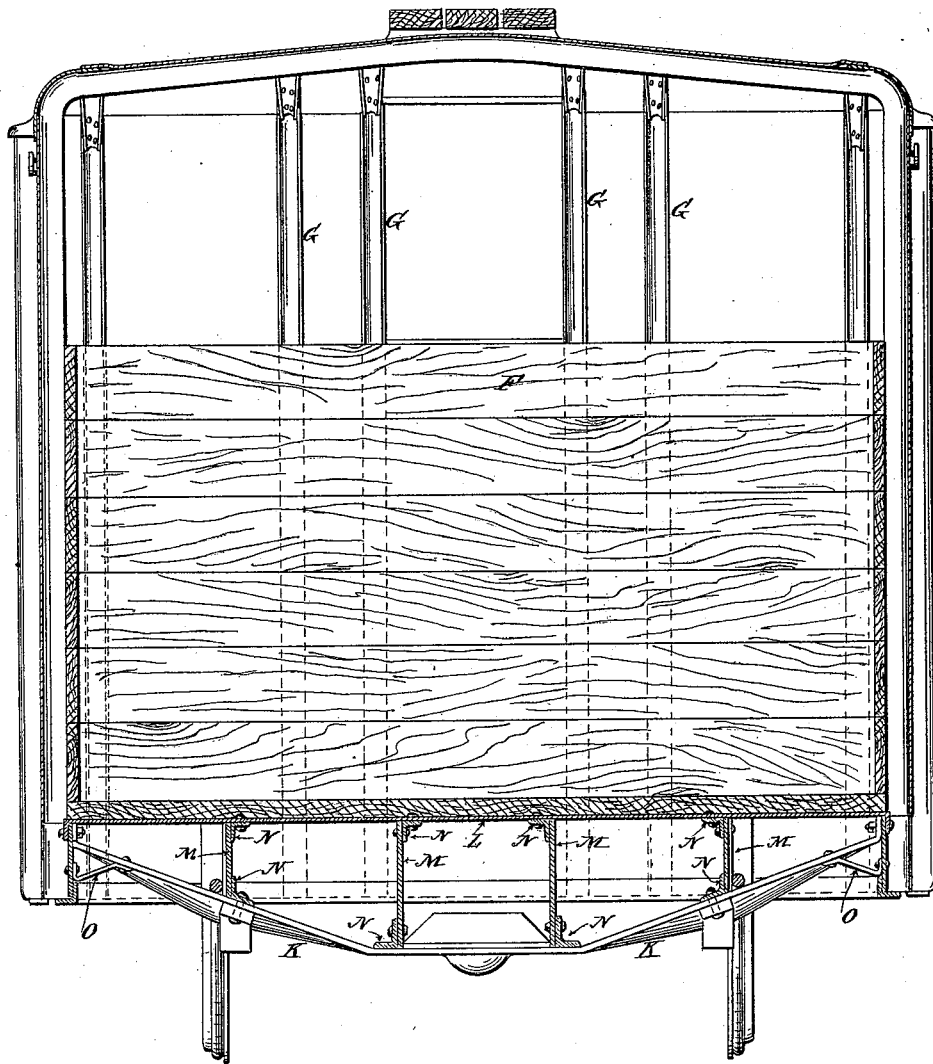
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*Fig. 3.*



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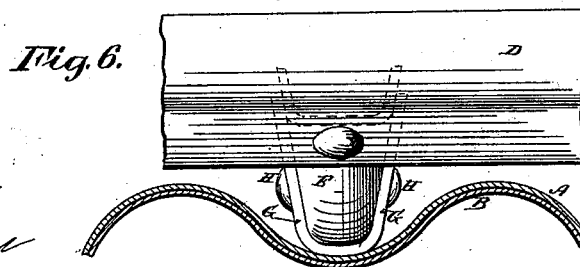
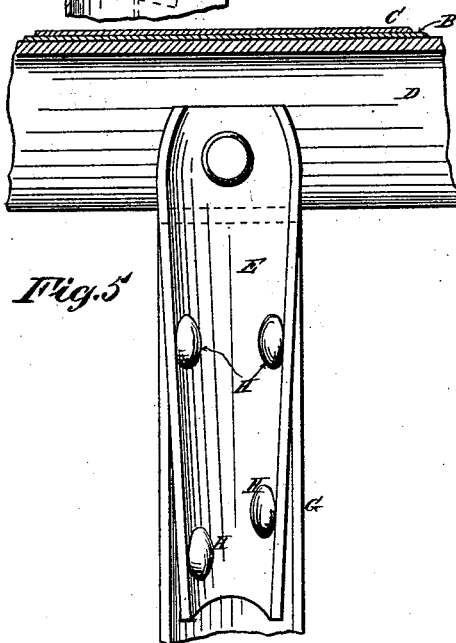
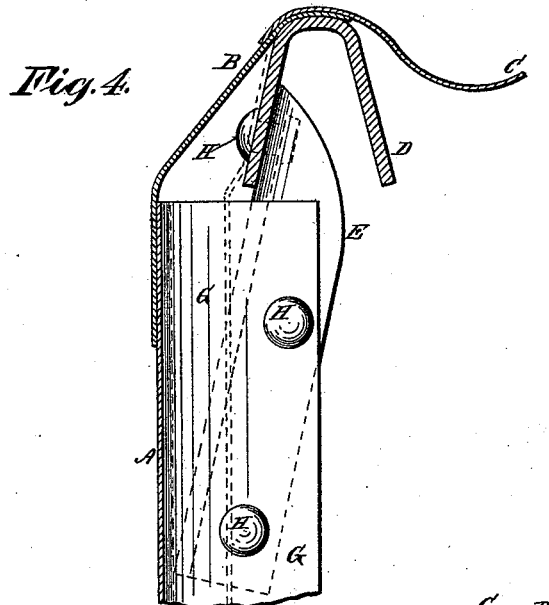
(No Model.)

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D. L. BARNES.  
METALLIC CAR.

No. 421,653.

Patented Feb. 18, 1890.



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# UNITED STATES PATENT OFFICE.

DAVID L. BARNES, OF CHICAGO, ILLINOIS, ASSIGNOR TO WILLIAM R. STIRLING, OF SAME PLACE, AND ALEXANDER J. LEITH, OF NEW YORK, N. Y.

## METALLIC CAR.

SPECIFICATION forming part of Letters Patent No. 421,653, dated February 18, 1890.

Application filed July 16, 1889. Serial No. 317,739. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID L. BARNES, of Chicago, Cook county, State of Illinois, have invented a new and useful Improvement in Metallic Car Construction, of which the following is a full, true, and exact description, reference being had to the accompanying drawings.

This invention relates to an improvement in metallic car construction, and is designed as a modification and in part as an improvement of the application filed by me on the 9th day of April, 1889, Serial No. 306,557.

My invention will be readily understood from the accompanying drawings, in which—

Figure 1 represents a longitudinal vertical elevation; Fig. 2, a longitudinal vertical section through one end of the car, showing the structure of the body-bolster; Fig. 3, a vertical cross-section through the body-bolster; Fig. 4, a longitudinal vertical cross-section through the end of the car, showing the method of supporting the carlings from the end posts; Fig. 5, a view of the structure shown in Fig. 4 from the inside, in part in section; and Fig. 6, a plan view of Fig. 4 with the part B broken away and showing the lower part of the part B and the side of the car in section.

The general structure of my car may be of any desired form, though I prefer that for which I have made application as above named, and the invention herein is particularly designed to improve the method of connecting the end posts and carlings and the construction of the body-bolster.

A represents generally the corrugated metallic side of the car, which may be lined with wood F, as indicated. The corrugated roof C is designed to be supported by carlings D, fitting said corrugations and which are generally of inverted-U shape in section. They are at-

tached to the bent posts G by connectors E, which are of bent metal riveted by rivets H, as shown. They are bent so as to fit within the inside of the U-shaped post, and the upper end projecting within the carling D should be slightly flattened in order to provide for the riveting there. A water-shed B is provided, fitting beneath the roof C and passing outside of the corrugated sheathing A, as shown. The body-bolster is combined with the center sills and intermediate sills, as shown in Fig. 3. The bolster itself K is formed of pressed steel, as described in my previous application, and forms a truss with the upper member L. The sills themselves are formed of plates M and angle-irons N, bolted thereto and to the parts of the body-bolster, and the side sills are braced to the body-bolster by struts O.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, in metallic car construction, of the U-shaped posts, the U-shaped carlings, and the U-shaped connecting-pieces E, fitting within the posts and attached thereto and to the carlings, substantially as described.

2. The body-bolster herein shown, consisting of the combination of the parts K and L, the plates M, and separate angle-irons N, attached to the plates and to the parts K L, substantially as described.

3. The combination, with the side sills of the car, of the metallic truss body-bolster K L and connecting-struts O, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DAVID L. BARNES.

Witnesses:

ANTHONY GREF,  
H. COUTANT.